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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/799,772	03/15/2004	Noboru Komine	Q80202	8627

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EXAMINER

WOLLSCHLAGER, JEFFREY MICHAEL

ART UNIT	PAPER NUMBER
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1732

DATE MAILED: 10/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/799,772

Applicant(s)

KOMINE ET AL.

Examiner

Jeff Wollschlager

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 August 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

Originally presented claims 1-5 are pending.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moriguchi et al. (Japanese Patent Publication 2000-309637; published on July 11, 2000) in view of Darley (U.S. Patent 5,122,315; issued June 16, 1992).

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

It is noted that U.S. Patent 6,399,709, which claims priority from Japanese Patent Publication 2000-309637, has been employed as the translation for the priority

document. As such, all citations regarding the Moriguchi et al. reference are drawn from U.S. Patent 6,399,709.

Regarding claim 1, Moriguchi et al. (hereinafter Moriguchi) teach a process for producing a thermoplastic elastomer composition comprising the steps of feeding bulky rubber, a thermoplastic resin, and an additive, to an extruder and then melt kneading the mixture in the extruder (col. 7, lines 46-50; col. 11, lines 5-15).

Moriguchi further teaches utilizing supply apparatus such as a belt type feeder or screw type feeder as the quantitative feeders for the thermoplastic resin and the additives (col. 16, lines 5-12; col. 11, lines 5-16) and further teaches employing a volume displacement method to determine the mass of rubber being fed to the extruder (col. 8, lines 21-27; col. 16, lines 1-4).

Moriguchi does not teach measuring the amount of product produced at an outlet of the extruder and using that information to calculate the amount of rubber being fed to the extruder and controlling the feed amount of the rubber to the extruder based on the calculated amount. However, Darley analogously teaches a method and apparatus for monitoring and controlling the output of thermoplastic from an extruder (Abstract; col. 3, lines 15-36).

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to modify the method of Moriguchi with the method and teaching of Darley to measure the amount of product produced at an outlet of the extruder and using that information in cooperation with the known feed rates of thermoplastic and additive as obtained in the method of Moriguchi to control the feed

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rate of rubber to the extruder because Darley teaches that extruders are widely recognized as being subject to deviations in the quality of product extruded (col. 1, lines 40-52) and that a method to improve the quality of product being produced from an extruder is to measure and control the output from an extruder (col. 2, lines 36-47). Additionally, one of ordinary skill in the art at the time of the claimed invention would have recognized that the method of Darley eliminates the need for the labor intensive process of measuring the volume displacement of rubber prior to feeding it to an extruder as taught in the method of Moriguchi (col. 8; lines 21-27). Further, it is noted that performing mass balances by calculating the last unknown variable in a process is notoriously well known in the art.

As to claim 2, Moriguchi teaches feeding the rubber to an extruder through a rubber feeder combined with a screw extruder and a gear pump (col. 9, lines 25-29).

As to claim 3, Darley analogously teaches using a controller to adjust the extruder feeding the gear pump to maintain a desired feeding pressure to a gear pump. (col. 3, lines 38-45). One of ordinary skill would be motivated to do this for the purpose of improving the quality of the product as taught by Darley (col. 1, lines 40-52; col. 2, lines 36-47).

As to claim 4, Moriguchi teaches the rubber is an ethylene-olefin copolymer rubber, or an ethylene-olefin-non-conjugated diene copolymer rubber (col. 4, lines 33-44; col. 5, lines 32-36).

As to claim 5, Moriguchi teaches the thermoplastic resin is an olefin polymer resin (col. 6, lines 61-67).

Response to Arguments

Applicant's arguments filed August 9, 2006 have been fully considered but they are not persuasive.

Applicant's arguments appear to be on the following grounds:

1. Darley fails to teach or suggest calculating the feed amount of one of its inputs (e.g. bulky rubber) and also fails to teach or suggest deducting the feeding amount of a thermoplastic resin and an additive from the amount of the produced thermoplastic elastomer composition.

Applicant's arguments are not persuasive for the following reasons:

1. There are 4 feed rates of interest:
 - a) Thermoplastic Resin to the extruder
 - b) Additives to the extruder
 - c) Rubber to the extruder
 - d) Total output from the extruder: $a) + b) + c)$

Moriguchi et al. employ quantitative feeders to expressly know the feed rate of materials a) and b) to the extruder (Figure 3, elements (26), (27); Figure 5; elements (44), and citations provided in the rejection above, for example). Moriguchi et al. estimate the feed rate of material c) to the extruder based on the volume displacement of the rubber and as such do not expressly know the true feed rate of rubber, c), or the combined output from the extruder, d).

Darley points out flaws with methods employing volumetric displacement techniques (col. 1, lines 40-53) in extruder operations and teaches a method of

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controlling an extrusion operation where the output, d), from an extruder is determined and the feed rate to the extruder is adjusted accordingly. Darley uses a programmable controller for performing the control functions. Darley determines, "the corresponding rate of material output in weight per unit time" (col. 3, lines 24-25), claim 1 (1). Darley further "calculates the rate of input of material to the extruder " (col. 3, lines 31-35) with the controller (col. 3, lines 28-37), claim 1 (2). This information is used to control the "rate of material input" to the extruder. The combined teaching of the references is that the values of feed rates: a), b), and d) are known and that a controller is used to make adjustments. The calculation clearly suggested to the ordinarily skilled artisan (and the quantity ultimately controlled) by the combined teaching is: $c) = d) - a) - b)$ [rubber = total – thermoplastic – additive].

The examiner notes that the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

Conclusion

All claims are rejected.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff Wollschlager whose telephone number is 571-272-8937. The examiner can normally be reached on Monday - Thursday 7:00 - 4:45, alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on 571-272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.


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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JW

Jeff Wollschlager
Examiner
Art Unit 1732

October 14, 2006


CHRISTINA JOHNSON
PRIMARY EXAMINER
10/16/06